

THE S. W. SHATTUCK CHEMICAL COMPANY, INC.,
BUILDING NO. 4
(Uranium, Molybdate and Rhenium
Processing Building)
1805 South Bannock Street
Denver
Denver County
Colorado

HAER No. CO-71-C

HAER
COLO
16-DENV,
65C-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Rocky Mountain Regional Office
P.O. Box 25287
Denver, Colorado 80225

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Part I. Introduction

Location: Building No. 4 (Uranium, Molybdate and Rhenium Processing) of the S. W. Shattuck Chemical Company, Inc. is located at 1805 South Bannock Street in the City and County of Denver, Colorado (Shattuck site). The Shattuck site is located approximately 4 miles south of Denver's downtown area near the intersection of Evans Avenue and Broadway.

Quadrangle: U. S. Geological Survey, Englewood 7.5-minute topographic quadrangle, dated 1965, photorevised 1980.

Date of Construction: Building No. 4 was constructed in 1911.

Present Owner: The S. W. Shattuck Chemical Company, Inc.
1805 South Bannock Street
Denver, Colorado 80223

Present Use: Mineral processing operations at the Shattuck site ceased in April of 1984 due to poor economic conditions associated with molybdenum and rhenium metals. The site is currently undergoing environmental remediation in accordance with the terms of a Superfund Record of Decision issued by the U. S. Environmental Protection Agency ("EPA") on January 28, 1992.

Significance: The significance of the Shattuck site arises from its role in processing various metals since 1918. At various periods of time, molybdenum compounds, radium, uranium compounds, and rhenium were produced at the site. From about 1934 to the early 1940's, Shattuck was one of only two companies in the U. S. that produced radium salts; although, collectively both companies produced only a small percentage of the radium used in the U. S. during that period.

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Prepared By:

Historic Narrative: Steven F. Mehls, Project Historien,
Western Historical Studies, Inc. June 1993

**Architectural and Historical Engineering Processes
Information:** Nanon A. Anderson, AIA, Andrews &
Anderson, July and October 1992.

Photography: Arnold Thallheimer, April and May 1992

Building No. 4

The original concrete and brick portions of this building were both constructed in 1911. The larger, brick section of the building is believed to have been used for general storage until some time in the 1950's (See Photographs, HAER No. CO-71-C-1 through 3). A 1955 site plan labels the west section of Building No. 4 the "Tungsten Building." Tungsten, an alloying agent for high-temperature metals, was produced at the site from approximately 1941 to 1944 (See Photograph, HAER No. CO-71-C-2).

Shattuck received a license to process uranium chemicals in 1955. Uranium processing occurred in a portion of the east section of Building No. 4. Other nonuranium products such as sodium molybdate, were also produced in portions of this building (See Photograph, HAER No. CO-71-C-2). Remaining uranium processing equipment and interior building materials were removed and disposed of in 1987 in anticipation of termination of the radioactive materials license administered by the Colorado Department of Health Radiation Control Division.

The small structure on the east end of the building was used for storage until about 1962 when the interior was remodeled. This portion of the building served to refine rhenium and later as a secure area for storing valuable chemicals produced on site. The two rhenium-based products produced at lab scale in this building were rhenium metal powder and perrhenic acid (See Photographs, HAER No. CO-71-C-5 through 7).

Rhenium metal powder was produced by the decomposition of ammonium perrhenate under hydrogen. Perrhenic acid was produced by the oxidation of either rhenium metal powder or rhenium dioxide; the volatilized gas (Re_2O_7) was collected in a water bath to form the acid. Perrhenic acid is used by oil refineries to prepare a platinum-rhenium catalyst for converting regular gasoline into high-octane fuel. The building was vacated in 1984.²

General Description

Two distinct, one-story, rectangular buildings, 55' x 75' and 15' x 20' make up Building No. 4. The first, on the east end, is a small concrete building. A contemporary of the east section of Building No. 3, this building was also poured in board-formed lifts. Adjoining the northwest corner of the concrete building was the large brick portion of the building. Wide bays, sedimented arches over large window openings, and a corbeled parapet demonstrate this building's early twentieth century commercial style on the south and west sides of the building. 1940's style brick and metal framed windows on the east and north sides reflect the repair work performed on the building after a fire damaged the original structure (See Photographs, HAER No. CO-71-C-1 through 7).

Roof

The roof of the east section consists of wood rafters which create a moderately sloped gable end roof with asphalt shingles (See Photographs, HAER No. CO-71-C-5 through 7). The west section has wood rafters which support a flat built-up roof (See Photograph, HAER No. CO-71-C-1 through 3). The two-story addition on the southwest corner, date unknown, and the shed addition on the

southeast corner, date unknown, of the brick building is steel frame supporting metal decking with built-up roofing.

Windows

The east section has two small metal-framed replacement sliders (See Photographs, HAER No. CO-71-C-5 and 6). Concrete block infills the 1911 window openings. The west section is fenestrated with metal-framed, fifteen- or twenty-light, fixed/awning combinations (See Photographs, HAER No. CO-71-C-1 and 3).

Doors

The east side of the brick section has a wood, sectional, overhead, garage-type door (See Photographs, HAER No. CO-71-C1, and 5). The north side has one wood man door. (See Photograph, HAER No. CO-71-C-3). The west side has one pair of man doors. The south side has one wood, sectional, overhead, garage-type door with an adjacent wood man door.

Foundation

The foundation is comprised of concrete slab floors with an unknown foundation.

Interior Features

The lab in the northeast corner of the west section of the building was created with brick over structural clay tile.

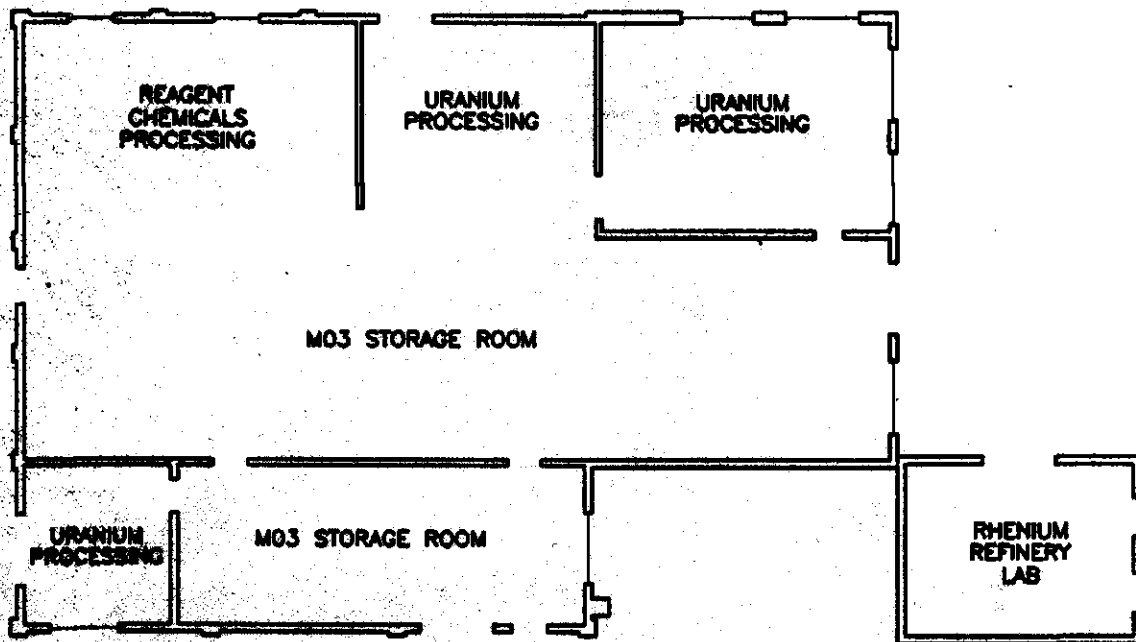
Exterior Features

A 1937 fire damaged the northeast corner of the west section. The fire is evidenced in the charred rafters and the retrofit section of brick wall and metal windows.

Ten feet to the south of Building No. 4 are two parallel, 8-foot-high, 30-foot-long, concrete walls running east to west. A wall-board swing gate was positioned on the east wall to prevent site exposure to pedestrians. The function of the structure was protection from possible vandalism to the hydrogen sulfide cylinders which were positioned between the two walls.

Endnotes

1. 1955 site plan of The S. W. Shattuck Chemical Company, 1805 South Bannock Street Denver, Colorado. Filed at the offices of John Faught & Associates, Attorneys at Law, 717 Seventeenth Street, Suite 1580, Denver, Colorado 80202.
2. Personal Communication, June 29, 1992, Mr. Henry F. Barry, Vice President - Technology, The S. W. Shattuck Chemical Company, Inc. with Nanon Adair Anderson, Historic Architect.



NORTH



SCALE 1/16" = 1'-0"

